

Network Details

Manhole Schedule

Manhole	Catchment Area (ha)	Diameter (m)	Type	CL (m)	IL (m)	Depth To Soffit (m)	Easting (m)	Northing (m)
S18	0.116	1.200	Type B	70.039	68.175	1.639	356401.889	180396.609
S19	0.078	1.350	Type C	69.332	67.856	1.251	356432.939	180439.802
S20	0.040	1.350	Type C	68.357	66.900	1.232	356460.362	180464.305
S21	0.017	1.200	Type B	68.874	66.780	1.868	356445.480	180450.975
S22	0.019	1.200	Type B	68.985	66.644	2.042	356443.975	180440.824
S23	0.000	1.200	Type B	68.720	66.579	1.842	356453.471	180431.936
S24	0.066	1.350	Type C	68.261	66.486	1.475	356469.925	180423.219
S25	0.135	1.350	Type C	68.945	67.252	1.393	356456.620	180355.466
S26	0.192	1.350	Type C	67.396	65.885	1.211	356496.090	180403.204
S27	0.088	1.350	Type C	63.501	62.001	1.200	356529.270	180446.696
S28	0.044	1.350	Type C	62.102	60.602	1.200	356541.053	180458.312
S29	0.077	1.350	Type C	61.361	60.011	1.200	356557.394	180451.207
S30	0.016	1.350	Type C	60.908	59.408	1.200	356552.488	180466.930
S31	0.063	1.350	Type C	67.079	65.450	1.404	356486.644	180486.375
S32	0.059	1.350	Type C	65.329	63.904	1.200	356516.216	180501.048
S33	0.000	1.350	Type C	64.680	63.222	1.233	356526.488	180507.492
S34	0.046	1.350	Type C	60.073	58.315	1.457	356561.487	180473.712
EX1	0.000	1.200	Type B	60.046	58.116	1.630	356565.888	180477.028

Pipe Schedule

Pipe Number	US Manhole	US IL (m)	DS Manhole	DS IL (m)	Diameter (m)	Length (m)	Gradient (1:x)	Roughness (mm)	US Depth To Soffit (m)	DS Depth To Soffit (m)
1.000	S18	68.175	S19	67.856	0.225	53.195	166.9	0.600	1.639	1.251
1.001	S19	67.856	S22	66.719	0.225	11.083	9.7	0.600	1.251	2.042
2.000	S20	66.900	S21	66.780	0.225	19.980	167.0	0.600	1.232	1.868
2.001	S21	66.780	S22	66.719	0.225	10.262	166.4	0.600	1.868	2.042
1.002	S22	66.644	S23	66.579	0.300	13.007	200.7	0.600	2.042	1.842
1.003	S23	66.579	S24	66.486	0.300	18.621	199.6	0.600	1.842	1.475
1.004	S24	66.486	S26	65.885	0.300	32.942	54.9	0.600	1.475	1.211
3.000	S25	67.252	S26	65.885	0.300	61.941	45.3	0.600	1.393	1.211
1.005	S26	65.885	S27	62.001	0.300	54.703	14.1	0.600	1.211	1.200
1.006	S27	62.001	S28	60.602	0.300	16.546	11.8	0.600	1.200	1.200
1.007	S28	60.602	S30	59.408	0.300	14.319	12.0	0.600	1.200	1.200
4.000	S29	60.011	S30	59.558	0.150	16.471	36.4	0.600	1.200	1.200
1.008	S30	59.408	S34	58.315	0.300	11.269	10.3	0.600	1.200	1.457
5.000	S31	65.450	S32	63.904	0.225	33.012	21.3	0.600	1.404	1.200
5.001	S32	63.904	S33	63.222	0.225	12.126	17.8	0.600	1.200	1.233
5.002	S33	63.222	S34	58.390	0.225	48.642	10.1	0.600	1.233	1.457
1.009	S34	58.315	EX1	58.116	0.300	5.510	27.7	0.600	1.457	1.630

Outfall Details

Outfall Manhole EX1 : Free Discharge

Flow Control Details

Simulation Settings

FSR: M5-60=20.00, R=0.35, Locale=England and Wales

Summer (Cv: 0.75), Winter (Cv: 0.84)

Global Time of Entry: 5.0 mins

Durations (mins): 15, 30, 60, 480, 600, 720

Return Periods (yrs) + Climate Change: (1, +0%), (30, +0%), (100, +40%)

Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %
1Yr 15Min Winter	34.957	0.00	0.04	30Yr 480Min Summer	6.855	0.00	0.00
1Yr 15Min Summer	34.957	0.00	0.14	30Yr 480Min Winter	6.855	0.00	0.00
1Yr 30Min Winter	22.649	0.00	0.03	30Yr 600Min Summer	5.801	0.00	0.00
1Yr 30Min Summer	22.649	0.00	0.07	30Yr 600Min Winter	5.801	0.00	0.00
1Yr 60Min Summer	14.222	0.00	0.00	30Yr 720Min Summer	5.059	0.00	0.00
1Yr 60Min Winter	14.222	0.00	0.00	30Yr 720Min Winter	5.059	0.00	0.00
1Yr 480Min Summer	3.368	0.00	0.00	100Yr +40% 15Min Summer	131.851	0.00	-0.16
1Yr 480Min Winter	3.368	0.00	0.00	100Yr +40% 15Min Winter	131.851	0.00	-0.52
1Yr 600Min Summer	2.882	0.00	0.00	100Yr +40% 30Min Summer	88.566	0.00	-0.35
1Yr 600Min Winter	2.882	0.00	0.00	100Yr +40% 30Min Winter	88.566	0.00	-0.20
1Yr 720Min Winter	2.538	0.00	0.00	100Yr +40% 60Min Summer	56.713	0.00	0.00
1Yr 720Min Summer	2.538	0.00	0.00	100Yr +40% 60Min Winter	56.713	0.00	0.00
30Yr 15Min Summer	72.682	0.00	0.02	100Yr +40% 480Min Summer	12.341	0.00	0.00
30Yr 15Min Winter	72.682	0.00	0.00	100Yr +40% 480Min Winter	12.341	0.00	0.00
30Yr 30Min Summer	48.363	0.00	0.00	100Yr +40% 600Min Summer	10.402	0.00	0.00
30Yr 30Min Winter	48.363	0.00	0.00	100Yr +40% 600Min Winter	10.402	0.00	0.00
30Yr 60Min Summer	30.811	0.00	0.00	100Yr +40% 720Min Winter	9.042	0.00	0.00
30Yr 60Min Winter	30.811	0.00	0.00	100Yr +40% 720Min Summer	9.042	0.00	0.00

Simulation Results

Return Period Yrs: 1.0

Climate Change %: 0

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S18	15 min Winter	8	68.284	0.109	18.058		OK
S19	15 min Winter	8	67.920	0.063	29.773		OK
S20	15 min Winter	8	66.959	0.059	6.244		OK
S21	15 min Winter	8	66.851	0.071	8.754		OK
S22	15 min Winter	9	66.795	0.151	40.389		OK
S23	15 min Winter	9	66.730	0.151	40.748		OK
S24	15 min Winter	9	66.604	0.119	50.706		OK
S25	15 min Winter	8	67.323	0.071	21.054		OK
S26	15 min Winter	9	66.004	0.118	99.134		OK
S27	15 min Winter	9	62.121	0.121	112.639		OK
S28	15 min Winter	9	60.727	0.125	119.379		OK
S29	15 min Winter	8	60.076	0.066	11.958		OK
S30	15 min Winter	9	59.536	0.127	133.181		OK
S31	15 min Winter	8	65.494	0.044	9.816		OK
S32	15 min Winter	8	63.964	0.060	18.965		OK
S33	15 min Winter	8	63.272	0.051	18.774		OK
S34	15 min Winter	9	58.506	0.191	158.505		OK
EX1	15 min Winter	9	58.307	0.191	158.935		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Velocity (m/s)	Flow (l/s)	Flow / Capacity	Status
1.000	15 min Winter	8	S18	S19	0.086	1.256	17.591	0.439	OK
1.001	15 min Winter	8	S19	S22	0.069	2.825	29.460	0.176	OK
2.000	15 min Winter	8	S20	S21	0.065	0.648	6.128	0.153	OK
2.001	15 min Winter	8	S21	S22	0.073	0.762	8.523	0.212	OK
1.002	15 min Winter	9	S22	S23	0.151	1.141	40.748	0.522	OK
1.003	15 min Winter	9	S23	S24	0.135	1.327	40.985	0.523	OK
1.004	15 min Winter	9	S24	S26	0.119	1.962	50.949	0.339	OK
3.000	15 min Winter	8	S25	S26	0.094	1.096	20.666	0.125	OK
1.005	15 min Winter	9	S26	S27	0.119	3.803	99.743	0.335	OK
1.006	15 min Winter	9	S27	S28	0.123	4.150	112.924	0.348	OK
1.007	15 min Winter	9	S28	S30	0.126	4.240	119.520	0.371	OK
4.000	15 min Winter	8	S29	S30	0.066	1.584	11.802	0.400	OK
1.008	15 min Winter	9	S30	S34	0.159	3.505	133.320	0.383	OK
5.000	15 min Winter	8	S31	S32	0.052	1.382	9.710	0.086	OK
5.001	15 min Winter	8	S32	S33	0.056	2.458	18.774	0.152	OK
5.002	15 min Winter	8	S33	S34	0.082	1.425	18.562	0.113	OK
1.009	15 min Winter	9	S34	EX1	0.191	3.351	158.935	0.750	OK

Return Period Yrs: 30.0

Climate Change %: 0

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S18	15 min Winter	8	68.347	0.172	37.525		OK
S19	15 min Winter	8	67.950	0.094	61.928		OK
S20	15 min Winter	8	66.986	0.086	12.975		OK
S21	15 min Winter	9	66.896	0.115	17.489		OK
S22	15 min Winter	8	66.889	0.245	84.862		OK
S23	15 min Winter	9	66.812	0.233	84.822		OK
S24	15 min Winter	9	66.668	0.183	106.352		OK
S25	15 min Winter	8	67.355	0.103	43.753		OK
S26	15 min Winter	9	66.068	0.182	205.873		OK
S27	15 min Winter	9	62.188	0.187	234.737		OK
S28	15 min Winter	9	60.797	0.195	249.103		OK
S29	15 min Winter	8	60.115	0.104	24.850		OK
S30	15 min Winter	9	59.626	0.217	277.938		OK
S31	15 min Winter	8	65.514	0.064	20.399		OK
S32	15 min Winter	8	63.992	0.089	39.464		OK
S33	15 min Winter	8	63.296	0.074	39.136		OK
S34	15 min Winter	9	58.883	0.568	330.812		Surcharged
EX1	15 min Summer	8	58.416	0.300	255.426		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Velocity (m/s)	Flow (l/s)	Flow / Capacity	Status
1.000	15 min Winter	8	S18	S19	0.133	1.499	36.614	0.914	OK
1.001	15 min Winter	8	S19	S22	0.132	2.542	61.443	0.367	OK
2.000	15 min Winter	8	S20	S21	0.100	0.746	12.791	0.319	OK
2.001	15 min Winter	9	S21	S22	0.142	0.684	18.027	0.449	OK
1.002	15 min Winter	8	S22	S23	0.238	1.385	83.451	1.069	OK
1.003	15 min Winter	9	S23	S24	0.208	1.649	86.131	1.100	OK
1.004	15 min Winter	9	S24	S26	0.182	2.351	105.767	0.704	OK
3.000	15 min Winter	8	S25	S26	0.142	1.314	43.135	0.261	OK
1.005	15 min Winter	9	S26	S27	0.184	4.564	207.910	0.699	OK
1.006	15 min Winter	9	S27	S28	0.191	4.967	235.675	0.726	OK
1.007	15 min Winter	9	S28	S30	0.206	4.819	249.540	0.774	OK
4.000	15 min Winter	8	S29	S30	0.104	1.877	24.534	0.831	OK
1.008	15 min Winter	9	S30	S34	0.259	4.300	278.634	0.801	OK
5.000	15 min Winter	8	S31	S32	0.076	1.701	20.232	0.179	OK
5.001	15 min Winter	8	S32	S33	0.081	3.024	39.136	0.316	OK
5.002	15 min Winter	8	S33	S34	0.149	1.385	38.810	0.235	OK
1.009	15 min Winter	9	S34	EX1	0.300	4.700	332.210	1.567	Surcharged

Return Period Yrs: 100.0

Climate Change %: 40

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S18	15 min Winter	9	68.810	0.635	63.967		Surcharged
S19	15 min Winter	10	67.993	0.136	95.959		OK
S20	15 min Winter	11	67.476	0.576	14.136		Surcharged
S21	15 min Winter	11	67.457	0.677	21.549		Surcharged
S22	15 min Winter	11	67.436	0.792	114.804		Surcharged
S23	15 min Winter	11	67.299	0.720	117.360		Surcharged
S24	15 min Winter	11	67.094	0.608	142.815		Surcharged
S25	15 min Winter	8	67.395	0.144	79.337		OK
S26	15 min Winter	10	66.571	0.685	293.538		Surcharged
S27	15 min Winter	10	63.151	1.150	325.604		Surcharged
S28	15 min Winter	10	61.846	1.244	340.234		Flood Risk
S29	15 min Winter	10	61.268	1.258	35.160		Flood Risk
S30	15 min Winter	10	60.587	1.179	381.698		Surcharged
S31	15 min Winter	8	65.538	0.088	36.989		OK
S32	15 min Winter	8	64.028	0.125	71.611		OK
S33	15 min Winter	8	63.324	0.102	71.074		OK
S34	15 min Winter	10	59.328	1.013	461.632		Surcharged
EX1	15 min Summer	6	58.416	0.300	287.024		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Velocity (m/s)	Flow (l/s)	Flow / Capacity	Status
1.000	15 min Winter	9	S18	S19	0.179	1.785	60.530	1.511	OK
1.001	15 min Winter	10	S19	S22	0.181	2.814	96.324	0.575	OK
2.000	15 min Winter	11	S20	S21	0.225	0.392	15.605	0.390	OK
2.001	15 min Winter	11	S21	S22	0.225	0.584	23.220	0.579	OK
1.002	15 min Winter	11	S22	S23	0.300	1.660	117.360	1.503	Surcharged
1.003	15 min Winter	11	S23	S24	0.300	1.689	119.358	1.525	Surcharged
1.004	15 min Winter	11	S24	S26	0.300	2.073	146.532	0.975	Surcharged
3.000	15 min Winter	8	S25	S26	0.222	1.400	78.443	0.474	OK
1.005	15 min Winter	10	S26	S27	0.300	4.035	285.187	0.958	Surcharged
1.006	15 min Winter	10	S27	S28	0.300	4.527	320.004	0.985	Surcharged
1.007	15 min Winter	10	S28	S30	0.300	4.781	337.939	1.048	Surcharged
4.000	15 min Winter	10	S29	S30	0.150	2.071	36.592	1.239	Surcharged
1.008	15 min Winter	10	S30	S34	0.300	5.389	380.914	1.094	Surcharged
5.000	15 min Winter	8	S31	S32	0.106	1.991	36.738	0.325	OK
5.001	15 min Winter	8	S32	S33	0.113	3.539	71.074	0.574	OK
5.002	15 min Winter	8	S33	S34	0.164	2.280	70.587	0.428	OK
1.009	15 min Winter	10	S34	EX1	0.300	6.566	464.124	2.189	Surcharged